

EXHIBIT 383

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

IN RE NATIONAL	:	MDL No. 2804
PRESCRIPTION OPIATE	:	CASE NO. 17-MD-2804
LITIGATION	:	(DAP)
	:	

EXPERT REPORT OF CRAIG J. MCCANN, PH.D., CFA
March 25, 2019

Table 13 Overlap between ARCOS Data and Defendant Data

Defendant	Transactions in Both Datasets			Transactions Only in ARCOS			Transactions Only in Defendants		
	N	MME	MME (%)	N	MME	MME (%)	N	MME	MME (%)
Cardinal Health	544,054	3,710,172,198	99.2%	1,397	2,347,131	0.1%	11,388	27,957,628	0.7%
AmerisourceBergen	420,974	2,759,799,395	84.4%	60,750	467,226,119	14.3%	19,451	42,932,581	1.3%
McKesson	423,952	2,360,097,033	89.7%	39,318	140,948,298	5.4%	31,182	128,686,406	4.9%
Walgreens	319,997	1,406,211,786	83.9%	36,337	257,764,538	15.4%	1,963	11,825,732	0.7%
CVS	113,342	223,193,105	38.7%	34,083	334,248,179	57.9%	11,317	19,815,640	3.4%
Anda	6,217	81,340,894	66.1%	1,475	41,640,416	33.8%	25	68,932	0.1%
HD Smith	10,606	80,568,759	95.4%	527	2,181,492	2.6%	375	1,672,837	2.0%
Walmart	41,890	79,487,906	59.2%	20,729	50,122,079	37.3%	1,324	4,684,806	3.5%
HBC	68,181	67,162,504	83.6%	6,940	10,749,410	13.4%	2,462	2,421,062	3.0%
Discount Drug Mart	31,602	58,974,937	93.8%	25	54,269	0.1%	1,941	3,862,765	6.1%
Prescription Supply	8,596	39,700,220	58.6%	5,122	28,066,884	41.4%	32	2,853	0.0%
Total	1,989,411	10,866,708,738	87.3%	206,703	1,335,348,814	10.7%	81,460	243,931,242	2.0%

75. Using my initial matching criteria, 87.3% of all MME in either the ARCOS Data or the datasets produced by Defendants are in both the ARCOS Data and the datasets produced by Defendants (i.e., the MME are in the intersection of the ARCOS Data and the datasets produced by Defendants).

76. The amount of MME found in both the ARCOS Data and the datasets produced by Defendants increases if I relax the stringent matching rules I imposed. As discussed more fully below, allowing matches to cross to an adjacent month increases the MME found in both the ARCOS Data and the datasets produced by Defendants by 98.0 million MME. Correcting Buyer information (e.g., DEA numbers and county) increases the MME in both the ARCOS Data and the datasets produced by Defendants by an additional 24.1 million MME.

77. The remainder of this section of the report includes a more detailed explanation of the MME that is either (1) in the ARCOS data but not in the datasets produced by Defendants, or (2) in the datasets produced by Defendants but not in the ARCOS Data for each Defendant listed in Table 13.

78. Excluding AmerisourceBergen, I can explain 95% of the 1.1 billion MME in Table 13 that is either (1) in the ARCOS Data but not in the datasets produced by Defendants, or (2) in the datasets produced by Defendants but not in the ARCOS Data.

79. For example, the ARCOS Data includes at least 613 million MME that are not in the datasets produced by Defendants because the datasets produced by Defendants are missing all transactions for some NDCs. The ARCOS Data also includes an additional 65 million MME that are not in the datasets produced by Defendants because the datasets produced by Defendants are missing all transactions for some calendar months.

80. Table 14 summarizes the overlap between the ARCOS Data and the datasets produced by Defendants after (1) allowing matches to cross to an adjacent calendar month and correcting Buyer information, and (2) excluding NDCs, Buyers, months, and reversed transactions that are entirely missing from either the ARCOS data or the datasets produced by the Defendants. Excluding AmerisourceBergen, **99.5%** of MME in either the ARCOS Data or the datasets produced by Defendants are in both the ARCOS Data and the datasets produced by Defendants.

Table 14 Overlap between ARCOS data and Defendant Data, allowing expanded matching and excluding known non-overlaps in the datasets

Defendant	Transactions in Both Datasets			Transactions Only in ARCOS			Transactions Only in Defendants		
	N	MME	MME (%)	N	MME	MME (%)	N	MME	MME (%)
Cardinal Health	544,231	3,709,925,916	99.9%	1,194	2,542,334	0.1%	4,775	1,131,973	0.0%
AmerisourceBergen	420,974	2,759,799,395	84.5%	59,799	464,163,248	14.2%	19,004	42,785,600	1.3%
McKesson	442,674	2,477,206,801	99.2%	2,477	9,740,581	0.4%	3,805	10,922,817	0.4%
Walgreens	319,997	1,406,211,786	99.2%	0	0	0.0%	1,963	11,825,732	0.8%
CVS	121,821	239,645,380	98.4%	396	654,112	0.3%	2,838	3,363,366	1.4%
Anda	6,219	81,344,677	99.5%	168	378,973	0.5%	23	65,148	0.1%
HD Smith	10,648	81,018,247	98.7%	12	28,106	0.0%	277	1,063,501	1.3%
Walmart	41,890	79,487,906	94.4%	69	38,881	0.0%	1,323	4,682,130	5.6%
HBC	69,325	68,161,943	95.3%	1,378	1,920,556	2.7%	1,318	1,421,623	2.0%
Discount Drug Mart	31,602	58,974,937	98.9%	25	54,269	0.1%	101	612,118	1.0%
Prescription Supply	8,596	39,700,220	99.8%	11	90,345	0.2%	32	2,853	0.0%
Total	2,017,977	11,001,477,209	95.2%	65,529	479,611,405	4.1%	35,459	77,876,861	0.7%

Table 24 Trailing Six-Month Maximum Threshold Flagged Transactions,
Cuyahoga County, OH 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	99,137	49,339	14,957	2,874	545	11,597	178,449
Anda, Inc	700	1,723	0	2	0	69	2,494
Cardinal Health	192,799	94,450	26,389	3,061	3,974	30,020	350,693
CVS	n/a	109,055	n/a	n/a	n/a	8,772	117,827
Discount Drug Mart	n/a	32,583	0	n/a	n/a	3,229	35,812
H. D. Smith	269	0	0	0	0	0	269
HBC Service Co	4,909	41,114	0	0	0	1,275	47,298
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	129,021	89,263	9,185	759	538	6,265	235,031
Miami-Luken	0	0	0	0	n/a	0	0
Prescription Supply	5,008	489	1,220	134	0	40	6,891
Rite Aid	n/a	18,828	n/a	n/a	n/a	2,748	21,576
Walgreens	97,401	100,421	19,462	3,900	0	10,744	231,928
Wal-Mart	16,070	25,737	477	76	0	990	43,350
Total	545,314	563,002	71,690	10,806	5,057	75,749	1,271,618

Table 25 Trailing Six-Month Maximum Threshold Flagged Transactions, Summit County, OH 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	77,175	52,681	21,289	6,341	2,830	10,804	171,120
Anda, Inc	690	1,302	121	2	0	188	2,303
Cardinal Health	111,200	50,300	24,731	5,707	2,638	13,065	207,641
CVS	n/a	45,927	n/a	n/a	n/a	2,624	48,551
Discount Drug Mart	n/a	8,500	0	n/a	n/a	720	9,220
H. D. Smith	60	125	0	n/a	0	0	185
HBC Service Co	2,682	26,651	0	0	0	703	30,036
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	96,172	64,409	20,338	5,156	4,116	6,280	196,471
Miami-Luken	2,999	1,308	391	0	236	0	4,934
Prescription Supply	16	4	0	0	0	0	20
Rite Aid	n/a	10,953	n/a	n/a	n/a	898	11,851
Walgreens	39,284	47,489	11,596	3,050	0	2,669	104,088
Wal-Mart	9,010	15,052	777	173	0	393	25,405
Total	339,288	324,701	79,243	20,429	9,820	38,344	811,825

B. Twice Trailing Twelve-Month Average Pharmacy Dosage Units

136. I identify transactions that cause the number of dosage units shipped by a Distributor to a Pharmacy in a calendar month to exceed twice the trailing twelve-month average dosage units to retail and chain pharmacies served by the Distributor. I have been asked by Counsel to assume that the Distributor did not effectively investigate the flagged transactions and so every subsequent transaction of that drug code is also flagged because the Distributor had an unfulfilled obligation to detect and investigate the first flagged transaction.

Table 26 Twice Trailing Twelve-Month Average Pharmacy Dosage Units
Threshold Flagged Transactions, Cuyahoga County, 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	45,288	26,985	8,256	2,502	844	16,731	100,606
Anda, Inc	587	950	51	6	0	256	1,850
Cardinal Health	121,206	82,155	24,003	4,621	5,713	56,834	294,532
CVS	n/a	34,001	n/a	n/a	n/a	6,422	40,423
Discount Drug Mart	n/a	32,848	0	n/a	n/a	2,554	35,402
H. D. Smith	311	0	12	4	11	17	355
HBC Service Co	4,942	4,690	29	104	0	669	10,434
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	51,631	68,503	8,532	1,505	1,344	22,790	154,305
Miami-Luken	0	0	0	0	n/a	0	0
Prescription Supply	802	471	1,176	174	20	690	3,333
Rite Aid	n/a	4,145	n/a	n/a	n/a	1,452	5,597
Walgreens	42,801	18,937	15,801	5,665	30	22,409	105,643
Wal-Mart	8,469	806	494	117	0	1,357	11,243
Total	276,037	274,491	58,354	14,698	7,962	132,181	763,723

Table 27 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions, Summit County, OH 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	41,408	48,241	17,443	6,140	3,737	22,741	139,710
Anda, Inc	1,081	1,245	221	22	0	325	2,894
Cardinal Health	84,118	48,828	27,703	7,966	4,458	35,525	208,598
CVS	n/a	27,081	n/a	n/a	n/a	1,443	28,524
Discount Drug Mart	n/a	7,405	0	n/a	n/a	533	7,938
H. D. Smith	0	105	0	n/a	0	23	128
HBC Service Co	2,025	16,692	200	28	22	491	19,458
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	64,582	62,291	20,257	6,303	5,538	24,320	183,291
Miami-Luken	2,939	1,222	452	88	304	388	5,393
Prescription Supply	0	4	0	1	0	0	5
Rite Aid	n/a	8,235	n/a	n/a	n/a	376	8,611
Walgreens	15,942	28,076	10,431	3,488	44	9,018	66,999
Wal-Mart	2,657	695	729	199	27	622	4,929
Total	214,752	250,120	77,436	24,235	14,130	95,805	676,478

C. Three Times Trailing Twelve-Month Average Pharmacy Dosage Units

140. I identify transactions that cause the number of dosage units shipped by a Distributor to a Pharmacy in a calendar month to exceed three times the trailing twelve-month average dosage units to retail and chain pharmacies served by the Distributor. I have been asked by Counsel to assume that the Distributor did not effectively investigate the flagged transactions and so every subsequent transaction of that drug code is also flagged because the Distributor had an unfulfilled obligation to detect and investigate the first flagged transaction.

Table 28 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions, Cuyahoga County, OH 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	22,663	14,792	3,933	1,319	289	10,561	53,557
Anda, Inc	306	584	3	0	0	182	1,075
Cardinal Health	62,297	67,273	17,572	2,867	4,475	39,223	193,707
CVS	n/a	13,485	n/a	n/a	n/a	2,619	16,104
Discount Drug Mart	n/a	32,445	0	n/a	n/a	1,995	34,440
H. D. Smith	311	0	0	0	0	0	311
HBC Service Co	1,652	2,069	12	34	0	42	3,809
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	31,620	41,655	4,172	730	581	13,998	92,756
Miami-Luken	0	0	0	0	n/a	0	0
Prescription Supply	96	468	838	148	1	428	1,979
Rite Aid	n/a	2,631	n/a	n/a	n/a	719	3,350
Walgreens	909	4,490	9,292	3,753	9	11,522	29,975
Wal-Mart	3,239	0	177	69	0	150	3,635
Total	123,093	179,892	35,999	8,920	5,355	81,439	434,698

Table 29 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions, Summit County, OH 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	26,024	40,096	10,643	4,823	3,051	13,724	98,361
Anda, Inc	981	993	177	21	0	295	2,467
Cardinal Health	49,733	42,267	21,073	6,408	2,295	24,609	146,385
CVS	n/a	17,930	n/a	n/a	n/a	370	18,300
Discount Drug Mart	n/a	7,278	0	n/a	n/a	403	7,681
H. D. Smith	0	91	0	n/a	0	23	114
HBC Service Co	857	8,099	103	0	13	114	9,186
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	36,410	48,607	16,642	4,721	4,198	16,232	126,810
Miami-Luken	0	1,111	0	79	243	331	1,764
Prescription Supply	0	4	0	0	0	0	4
Rite Aid	n/a	2,062	n/a	n/a	n/a	129	2,191
Walgreens	0	6,712	6,788	2,491	44	4,516	20,551
Wal-Mart	1,403	0	713	173	0	131	2,420
Total	115,408	175,250	56,139	18,716	9,844	60,877	436,234

D. Maximum 8,000 Dosage Units Monthly

144. I identify transactions that cause the number of dosage units shipped by a Distributor to a Pharmacy in a calendar month to exceed 8,000 dosage units. I have been asked by Counsel to assume that the Distributor did not effectively investigate the flagged transactions and so every subsequent transaction of that drug code is also flagged because the Distributor had an unfulfilled obligation to detect and investigate the first flagged transaction.

145. Figure 17 illustrates total opioid shipments into Cuyahoga County from 1996 to 2018 from ARCOS Data for 2006 to 2014 and, to the extent I have Defendant transaction data for the periods before 2006 and after

Table 30 Maximum 8,000 Dosage Units Monthly Threshold Flagged Transactions, Cuyahoga County, OH 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	94,012	27,456	949	0	0	1,187	123,604
Anda, Inc	17	55	0	0	0	0	72
Cardinal Health	110,826	48,016	2,102	0	0	1,731	162,675
CVS	n/a	63,845	n/a	n/a	n/a	0	63,845
Discount Drug Mart	n/a	20,875	0	n/a	n/a	0	20,875
H. D. Smith	308	0	0	0	0	0	308
HBC Service Co	3,992	28,758	0	0	0	0	32,750
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	77,402	31,364	0	0	0	0	108,766
Miami-Luken	0	0	0	0	n/a	0	0
Prescription Supply	3,312	0	0	0	0	0	3,312
Rite Aid	n/a	9,603	n/a	n/a	n/a	0	9,603
Walgreens	88,496	74,958	0	0	0	0	163,454
Wal-Mart	9,165	15,540	0	0	0	0	24,705
Total	387,530	320,470	3,051	0	0	2,918	713,969

Table 31 Maximum 8,000 Dosage Units Monthly Threshold Flagged Transactions, Summit County, OH 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	68,640	50,724	3,831	1,071	2,265	0	126,531
Anda, Inc	811	25	109	0	0	0	945
Cardinal Health	80,037	31,077	3,214	927	748	570	116,573
CVS	n/a	46,272	n/a	n/a	n/a	0	46,272
Discount Drug Mart	n/a	6,299	0	n/a	n/a	0	6,299
H. D. Smith	0	0	0	n/a	0	0	0
HBC Service Co	2,107	25,874	0	0	0	0	27,981
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	78,847	44,278	4,036	1,050	0	0	128,211
Miami-Luken	3,180	0	0	0	0	0	3,180
Prescription Supply	0	0	0	0	0	0	0
Rite Aid	n/a	12,057	n/a	n/a	n/a	0	12,057
Walgreens	36,774	48,454	0	0	0	0	85,228
Wal-Mart	2,897	7,740	0	0	0	0	10,637
Total	273,293	272,800	11,190	3,048	3,013	570	563,914

E. Maximum Daily Dosage Units

148. I identify transactions that cause the number of dosage units shipped by a Distributor to a Pharmacy in a day to exceed a number of dosage units that varies by drug type and within some drug types by formulation.⁵⁵ I have been asked by Counsel to assume that the Distributor did not effectively investigate the flagged transactions and so every subsequent transaction of that drug code is also flagged because the Distributor had an unfulfilled obligation to detect and investigate the first flagged transaction.

⁵⁵ Maximum Daily Dosage Units used as specified in CAH_MDLPRIORPRO_DEA07_01384160

Table 32 Maximum Daily Dosage Units Threshold Flagged Transactions in Cuyahoga County, 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	107,350	52,226	18,018	3,366	n/a	3,292	184,252
Anda, Inc	904	2,129	46	20	n/a	95	3,194
Cardinal Health	166,869	88,662	30,253	4,244	n/a	10,147	300,175
CVS	n/a	115,449	n/a	n/a	n/a	5,951	121,400
Discount Drug Mart	n/a	32,424	0	n/a	n/a	2,036	34,460
H. D. Smith	311	19	0	4	n/a	18	352
HBC Service Co	5,978	46,103	0	0	n/a	10	52,091
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	118,299	88,832	9,825	1,154	n/a	1,298	219,408
Miami-Luken	2	133	0	0	n/a	0	135
Prescription Supply	5,351	521	1,471	162	n/a	6	7,511
Rite Aid	n/a	21,291	n/a	n/a	n/a	1,343	22,634
Walgreens	97,777	107,036	21,923	3,733	n/a	6,949	237,418
Wal-Mart	14,593	26,963	818	76	n/a	387	42,837
Total	517,434	581,788	82,354	12,759	n/a	31,532	1,225,867

Table 33 Maximum Daily Dosage Units Threshold Flagged Transactions in Summit County, 1996-2018

# of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
AmerisourceBergen	80,140	59,406	23,672	7,252	n/a	2,196	172,666
Anda, Inc	1,130	1,566	205	41	n/a	19	2,961
Cardinal Health	104,253	52,285	27,023	6,358	n/a	4,104	194,023
CVS	n/a	49,701	n/a	n/a	n/a	1,759	51,460
Discount Drug Mart	n/a	8,435	0	n/a	n/a	357	8,792
H. D. Smith	0	74	0	n/a	n/a	0	74
HBC Service Co	2,858	29,533	33	0	n/a	0	32,424
Henry Schein Inc	n/a	n/a	n/a	n/a	n/a	n/a	n/a
McKesson Corp	96,342	69,871	21,349	5,883	n/a	518	193,963
Miami-Luken	3,184	1,404	476	53	n/a	0	5,117
Prescription Supply	15	5	0	1	n/a	0	21
Rite Aid	n/a	12,512	n/a	n/a	n/a	177	12,689
Walgreens	40,192	50,679	12,257	3,059	n/a	353	106,540
Wal-Mart	7,411	14,905	1,013	169	n/a	96	23,594
Total	335,525	350,376	86,028	22,816	n/a	9,579	804,324

F. Additional Identification

152. I have been asked by Counsel to assume that Chain Distributors may have had knowledge of - or information available to inform them of - opioid shipments from all Distributors to the Chain Distributor's affiliated pharmacies. I have re-run the five identification routines described above assuming that the Chain Distributors could have flagged transactions based on this expanded information set and report the results for the Chain Distributors in Table 34 through Table 43 below. Additional charts and tables reflecting the result of applying methodologies below to each Chain Distributor are in Appendix 11.

1. Maximum Monthly, Trailing Six-month Threshold

Table 34 Trailing Six-Month Maximum Threshold Flagged Transactions, Cuyahoga County, OH 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	65,249	86,461	9,769	908	1,130	12,154	175,671
Discount Drug Mart	18,313	24,531	2,416	98	0	1,786	47,144
HBC / Giant Eagle	27,810	74,444	297	20	0	5,202	107,773
Rite Aid	45,986	38,903	5,553	282	396	6,000	97,120
Walgreens	100,484	86,597	22,490	5,374	1,294	12,712	228,951
Wal-Mart	10,520	22,448	213	74	0	1,185	34,440
Total	268,362	333,384	40,738	6,756	2,820	39,039	691,099

Table 35 Trailing Six-Month Maximum Threshold Flagged Transactions, Summit County, OH 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	34,067	37,475	9,393	2,242	986	3,487	87,650
Discount Drug Mart	6,052	6,300	1,305	245	71	420	14,393
HBC / Giant Eagle	21,246	50,968	3,772	941	119	2,415	79,461
Rite Aid	18,263	18,990	4,587	1,106	651	1,665	45,262
Walgreens	39,482	39,538	13,088	4,099	280	3,772	100,259
Wal-Mart	5,960	13,442	522	158	0	494	20,576
Total	125,070	166,713	32,667	8,791	2,107	12,253	347,601

2. *Twice Trailing Twelve-Month Average Pharmacy Dosage Units*

Table 36 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions, 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	30,660	17,708	4,925	639	1,731	15,169	70,832
Discount Drug Mart	4,897	1,600	1,637	145	140	3,532	11,951
HBC / Giant Eagle	0	0	126	78	102	3,543	3,849
Rite Aid	31,051	8,623	3,661	680	1,162	6,999	52,176
Walgreens	65,885	5,542	8,621	4,170	2,943	18,839	106,000
Wal-Mart	4,883	0	154	57	72	1,101	6,267
Total	137,376	33,473	19,124	5,769	6,150	49,183	251,075

Table 37 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions, Summit County, OH 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	21,880	18,368	7,226	2,271	1,731	6,221	57,697
Discount Drug Mart	0	62	1,158	398	306	1,221	3,145
HBC / Giant Eagle	8,118	14,073	3,617	1,274	660	3,222	30,964
Rite Aid	16,583	11,853	4,192	1,154	969	3,227	37,978
Walgreens	29,185	6,270	10,156	3,704	1,525	4,954	55,794
Wal-Mart	1,556	0	474	164	99	484	2,777
Total	77,322	50,626	26,823	8,965	5,290	19,329	188,355

3. *Three Times Trailing Twelve-Month Average Pharmacy Dosage Units*

Table 38 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions, Cuyahoga County, OH 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	12,948	6,453	2,522	322	1,282	8,874	32,401
Discount Drug Mart	0	0	514	98	0	2,227	2,839
HBC / Giant Eagle	0	0	0	20	0	1,537	1,557
Rite Aid	19,405	3,677	2,009	119	515	3,770	29,495
Walgreens	27,854	0	2,086	1,391	1,656	8,959	41,946
Wal-Mart	1,385	0	154	15	9	38	1,601
Total	61,592	10,130	7,285	1,965	3,462	25,405	109,839

Table 39 Three Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions, Summit County, OH 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	9,034	9,669	3,800	1,407	1,324	2,239	27,473
Discount Drug Mart	0	21	390	208	71	518	1,208
HBC / Giant Eagle	5,929	8,228	2,401	941	216	1,976	19,691
Rite Aid	9,980	2,895	3,074	925	774	1,093	18,741
Walgreens	15,672	0	2,247	1,579	668	1,942	22,108
Wal-Mart	313	0	458	158	36	381	1,346
Total	40,928	20,813	12,370	5,218	3,089	8,149	90,567

4. *Maximum 8,000 Dosage Units Monthly*

Table 40 Maximum 8,000 Dosage Units Monthly Threshold Flagged Transactions, Cuyahoga County, OH 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	50,282	61,480	0	0	0	0	111,762
Discount Drug Mart	13,464	20,375	0	0	0	0	33,839
HBC / Giant Eagle	6,877	50,434	0	0	0	0	57,311
Rite Aid	35,750	19,305	0	0	0	0	55,055
Walgreens	99,861	73,377	0	0	0	0	173,238
Wal-Mart	4,814	12,998	0	0	0	0	17,812
Total	211,048	237,969	0	0	0	0	449,017

Table 41 Maximum 8,000 Dosage Units Monthly Threshold Flagged Transactions, Summit County, OH 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	34,946	38,798	0	0	0	71	73,815
Discount Drug Mart	3,424	5,523	0	0	0	0	8,947
HBC / Giant Eagle	15,938	42,894	0	0	0	0	58,832
Rite Aid	18,618	20,304	0	0	0	0	38,922
Walgreens	42,349	42,821	0	0	0	0	85,170
Wal-Mart	1,345	6,806	0	0	0	0	8,151
Total	116,620	157,146	0	0	0	71	273,837

5. *Maximum Daily Dosage Units*

Table 42 Maximum Daily Dosage Units Threshold Flagged Transactions in Cuyahoga County, 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	63,914	96,391	11,355	1,753	n/a	7,237	180,650
Discount Drug Mart	18,246	26,801	3,023	202	n/a	381	48,653
HBC / Giant Eagle	21,554	74,603	382	24	n/a	1,238	97,801
Rite Aid	45,264	42,065	5,584	638	n/a	3,969	97,520
Walgreens	105,081	96,179	24,784	5,156	n/a	8,830	240,030
Wal-Mart	9,093	24,354	391	74	n/a	491	34,403
Total	263,152	360,393	45,519	7,847	n/a	22,146	699,057

Table 43 Maximum Daily Dosage Units Threshold Flagged Transactions in Summit County, 2006-2014

No. of Flagged Transactions	Oxycodone	Hydrocodone	Morphine	Hydromorphone	Oxymorphone	Other	Total
CVS	36,542	41,052	9,946	2,592	n/a	2,020	92,152
Discount Drug Mart	6,050	6,849	1,692	245	n/a	170	15,006
HBC / Giant Eagle	20,496	51,934	3,737	873	n/a	594	77,634
Rite Aid	19,365	20,835	4,762	1,388	n/a	736	47,086
Walgreens	42,932	43,575	14,064	4,225	n/a	416	105,212
Wal-Mart	4,273	14,134	662	154	n/a	105	19,328
Total	129,658	178,379	34,863	9,477	n/a	4,041	356,418